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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/983,048	10/15/2001	Gregory H. Ames	78333	8185

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Office Of Counsel, Bldg 112T  
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EXAMINER

KIM, ELLEN E

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 07/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/983,048

Applicant(s)

AMES ET AL.

Examiner

Ellen E Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12, 16, 18-20, 22-31, 33 and 34 is/are rejected.
- 7) ☒ Claim(s) 11, 13-15, 17, 21 and 32 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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### DETAILED ACTION

This action is responsive to Applicant's amendment filed on 7/14/03.

#### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claim 30 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Claim 30 recites the limitation "said legs" in line 2. There is insufficient antecedent basis for this limitation in the claim.

#### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 1-10, 12, 16, 18-20, 22-31, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bucholtz [USPAT 6,471,710].**

Bucholtz discloses probe position sensing system comprising curvature sensors 42a, 42b, 42c [fig. 2], a bend member 47 [fig. 3], optical fibers 50, and detection device 54 [fig. 4].

Bucholtz fails to teach the device is used for hydrophone array. It would have been obvious to the ordinary skilled person in the art at the time the invention was made to modify Bucholtz's device to be utilized for the hydrophone array system because Bucholtz clearly teaches at column 13, lines 51-end that the system can be utilized in wide variety of medical and non-medical applications. It is clear that the system is hermetically sealed so that it can be utilized in medical application for the high efficiency.

In re claims 5, 6, 8, and 9, Bucholtz fails to show more than one optical fiber Bragg grating embedded in each of the optical fibers. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device to include more than one optical fiber Bragg grating, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

In re claim 10, element 41 itself functions as a coupling means.

**Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bucholtz in view of Danisch [USPAT 6,127,672].**

Bucholtz discloses every aspect of claimed invention except for the roll sensor.

Danisch teaches at column 11 lines 8-23 that combination of plurality of sensors.

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Therefore, It would have been obvious to the ordinary skilled person in the art at the time the invention was made to modify Bucholtz's device to include the roll sensor for the purpose of accurate information of the property change in the device.

### ***Response to Arguments***

Applicant argues that Bucholtz does not disclose or teach means for limiting the bending of the optical fiber. Examiner does not agree with Applicant's argument because Bucholtz's element 47 in fig. 3 clearly limits the bending of the optical fiber. Applicant fails to claim the detail definition of the means for limiting the bending of the optical fiber.

### ***Allowable Subject Matter***

**Claims 11, 13-15, 17, 21, and 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.**

The following is a statement of reasons for the indication of allowable subject matter: the prior art does not disclose or suggest a system for detecting curvature in a towed hydrophone array comprising all the specific elements with the specific combination including coupling means comprising a pair of rigid pieces as set forth in claim 11; including a mount assembly comprising a cylindrical structure having a free center and an off axis slot for receiving the bend rod as set forth in claim 13; including a mount assembly inside the bend cylinder, a gap between an inner surface of the bend cylinder and an outer surface of the mount assembly, and the gap being sized to limit the bending of the optical fibers as set forth in claim 21; and including the

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optical fibers running longitudinally down the length of the bend rod and wherein the optical fibers is radially distributed around the perimeter of the bend rod as set forth in claim 32.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Further references of interest are cited on Form PLO-892, which is attachment to this office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ellen Kim whose telephone number is (703) 308-4946. The examiner can normally be reached on Monday and Thursday.

Ellen E. Kim  
Primary Examiner  
July 29, 2003/EK

